Figure 1

```
  1  MQTCPLAEPG HVSQALGTLL FLAASLSAQN EGWDSPICTE GVVSVSWGEN
 51  TVMSCNISNA FSHVNIKLRA HGQESAIFNE VAPGYFSRDG WQLQVQGGVA
101  QLVIKGARDS HAGLYMWHLV GHQRNNRQVT LEVSGAEPQS APDTGFWPVP
151  AVVTAVFILL VALYMFAWYR CRCSQQRREK KFFLLEPQMK VAALRAGAQQ
201  GLSRASAELW TPDSEPTPRP LALVFKPSPL GALELLSPQP LFPYAADP*
```

Figure 2

Z12 promoter (1-195) and cDNA (196-2180)sequence

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   1  ATTCCTGCTT CCTTTAGCGT GAACGCGGGT GCGGTGCCTC CCGTGAAATA
  51  ATAAATTCAC CGTCACGCTT GTTGTGAACG CGGGTGGTTC CCGAAACTTG
 101  GAGGCTTCCC GTAAACCCAG CTCCTTCCTC ATCTGGGAGG TGGGTCCCGC
                                                 ↓
 151  GCGGGTCCGC CGCCTCCTCC CTGGCCCCTC CCTCTCGTGT CTTTCATTTT
 201  CCTGGGGCTC CGGGGCGCGG AGAAGCTGCA TCCCAGAGGA GCGCGTCCAG
 251  GAGCGGACCC GGGAGTGTTT CAAGAGCCAG TGACAAGGAC CAGGGGCCCA
 301  AGTCCCACCA GCCATGCAGA CCTGCCCCCT GGCATTCCCT GGCCACGTTT
 351  CCCAGGCCCT TGGGACCCTC CTGTTTTTGG CTGCCTCCTT GAGTGCTCAG
 401  AATGAAGGCT GGGACAGCCC CATCTGCACA GAGGGGGTAG TCTCTGTGTC
 451  TTGGGGCGAG AACACCGTCA TGTCCTGCAA CATCTCCAAC GCCTTCTCCC
 501  ATGTCAACAT CAAGCTGCGT GCCCACGGGC AGGAGAGCGC CATCTTCAAT
 551  GAGGTGGCTC CAGGCTACTT CTCCCGGGAC GGCTGGCAGC TCCAGGTTCA
 601  GGGAGGCGTG GCACAGCTGG TGATCAAAGG CGCCCGGGAC TCCCATGCTG
 651  GGCTGTACAT GTGGCACCTC GTGGGACACC AGAGAAATAA CAGACAAGTC
 701  ACGCTGGAGG TTTCAGGTGC AGAACCCCAG TCCGCCCCTG ACACTGGGTT
 751  CTGGCCTGTG CCAGCGGTGG TCACTGCTGT CTTCATCCTC TTGGTCGCTC
 801  TGGTCATGTT CGCCTGGTAC AGGTGCCGCT GTTCCCAGCA ACGCCGGGAG
 851  AAGAAGTTCT TCCTCCTAGA ACCCCAGATG AAGGTCGCAG CCCTCAGAGC
 901  GGGAGCCCAG CAGGGCCTGA GCAGAGCCTC CGCTGAACTG TGGACCCCAG
 951  ACTCCGAGCC CACCCCAAGG CCGCTGGCAC TGGTGTTCAA ACCCTCACCA
1001  CTTGGAGCCC TGGAGCTGCT GTCCCCCCCA ACCCTTGTTT CCATATGCCG
1051  CAGACCCATA GCCGCCTGCA AGGCAGAGAG GACACAGGAG AGCCAGCCCT
1101  GAGTGCCGAC CTTGGGTGGC GGGGCCTGGG TCTCTCGTCC CACCCGGAGG
1151  GCACAGACAC CGGCTTGCTT GGCAGGCTGG GCCTCTGTGT CACCCACTCC
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1201 TGGGTGCGTG CAGACCCTTC CCCTCCACCC CCCAGGTCTT CCAAGCTCTG

1251 CTTCCTCAGT TTCCAAAATG GAACCACCTC ACCTCCGCAG CACCCGACTT

1301 ACCAGGACGC ATGCCCCTCC CTCTGCCCTC ATCAAACCCA CAGACCCGGA

1351 CTCCCTTTCT GCCACCCCAG GCTGGTCCGG CCCCAGGTGT GGGGTCCGCT

1401 CTCTCCACTC CCAGGGCTCC GCGCCCAAGT GAGGGGGCCC CTGCCGGAGC

1451 CTCAGACACA CTGGAGTTCA GGGCTGGGGG GGCCTTGGCA CATACCTGTC

1501 CCTTGGCTAT GAGCAGGCTT TGGGGGCCCT TCCGCGGCAG CCCCGGGGGC

1551 CGAGGTAGGG TCTGGGGGCT TAGAGGCTGG GATGGCTCCT GGCCCCACCG

1601 CCAGGGGGCA AGCGCAGGCC GGGCTGGGAG GCGGCGGCGG CGGCTCGGGC

1651 TGGGGGGTCA GGTGGACGCT GCCTCCGGGG CTGGTCGCGC ATCCCTCAGT

1701 CCCTCGGCCA CCCGGGGGTC GCTCCCTCGT GCCCACCGCA CCTGCCGAGC

1751 CTCTTTGGAC CCAGATCTGT TCATGCTTTT GTCTTCGTCA CTGCGGCGGG

1801 GCCCTTTGAT GTCTTCATCT GTATGGGGTG GAAAAATCAC CGGGAATCCC

1851 CCTTCAGTTC TTTGAAAAAG TTCCATGACT CGAATATCTG AAATGAAGAA

1901 AACAAACCGA CTCACAAACC TCCAAGTAGC TCCAAATGCA ATTTTTAAAA

1951 TGGAAAACAA AAATCTGAAA GAAACGTCTT TAGTGGCTTT AAGCCCCAAA

2001 ACGTCCCTAA GGCGTCCTCG AGATGAAGAC GGGGGGGAGC CCCAGCCAGG

2051 TGGAGACCCC GCAGGACGCG GCGGCGCCCG GTGACCGAGG CCTCGCACAG

2101 CCGGCCGCCC TGAGGGTCGG GCCGAGCCAG GGTCCAAGAG GGGCGCGTTT

2151 GTGTCTCGGG TTAAAATAAG GTTCCGTCCG

Figure 3 : K12 Expression

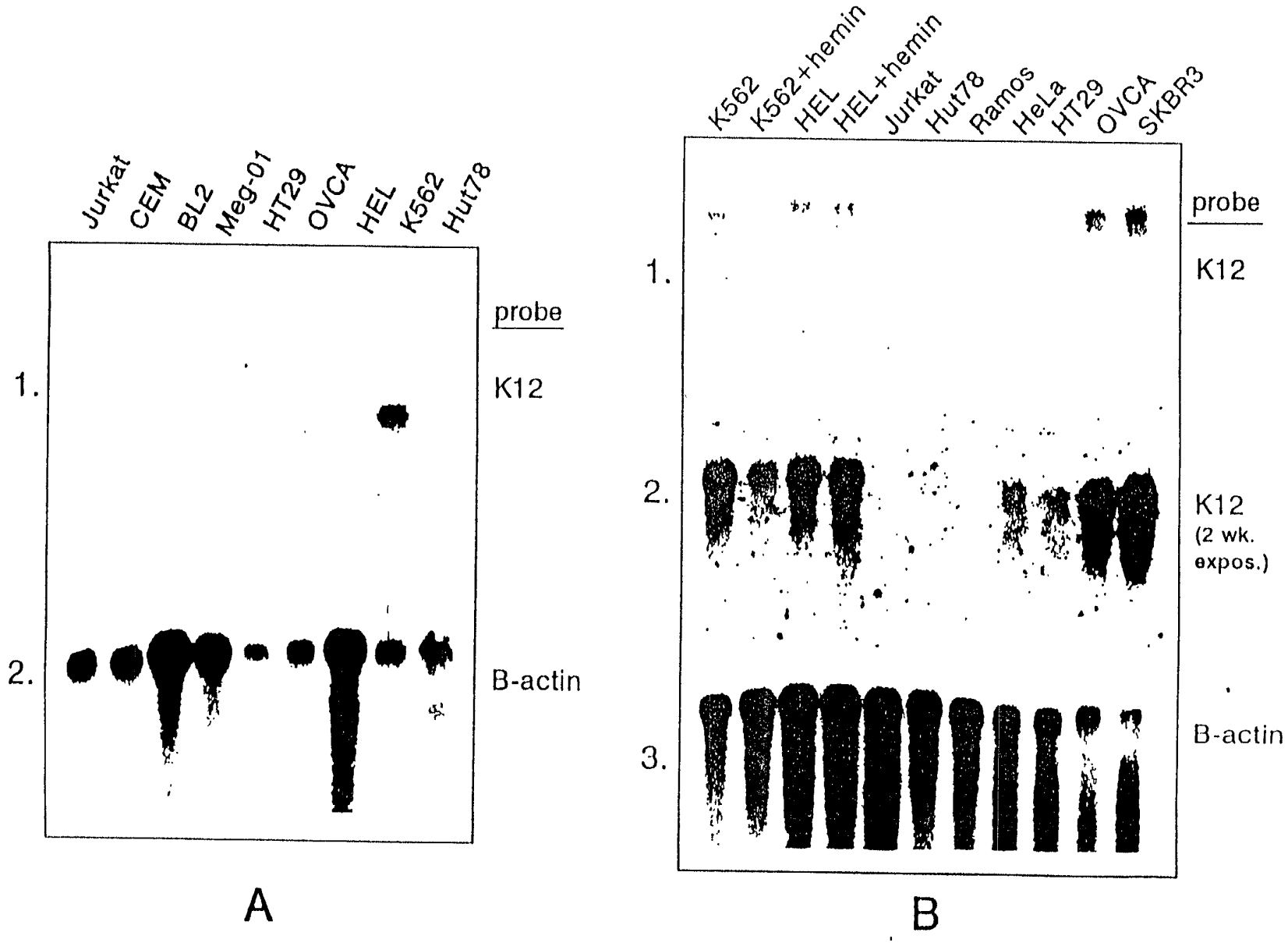
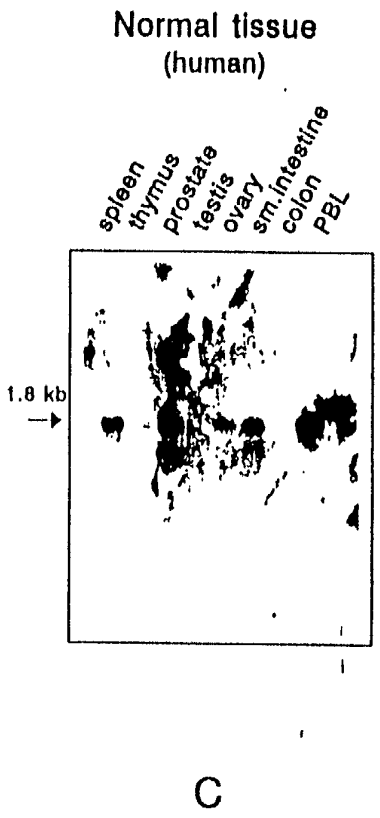
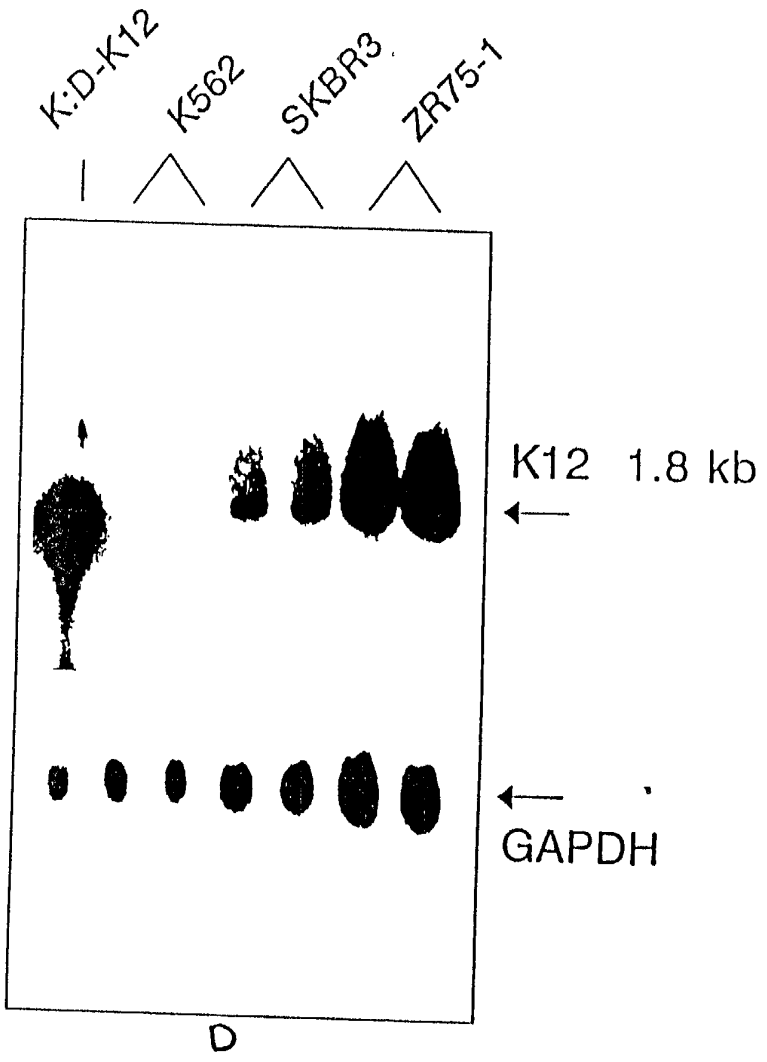


Figure 3 (cont)



C



D

Western Blot Probed with Antiserum to K12

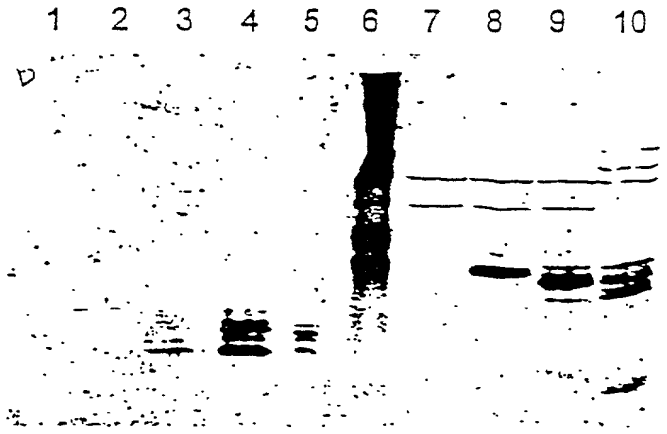


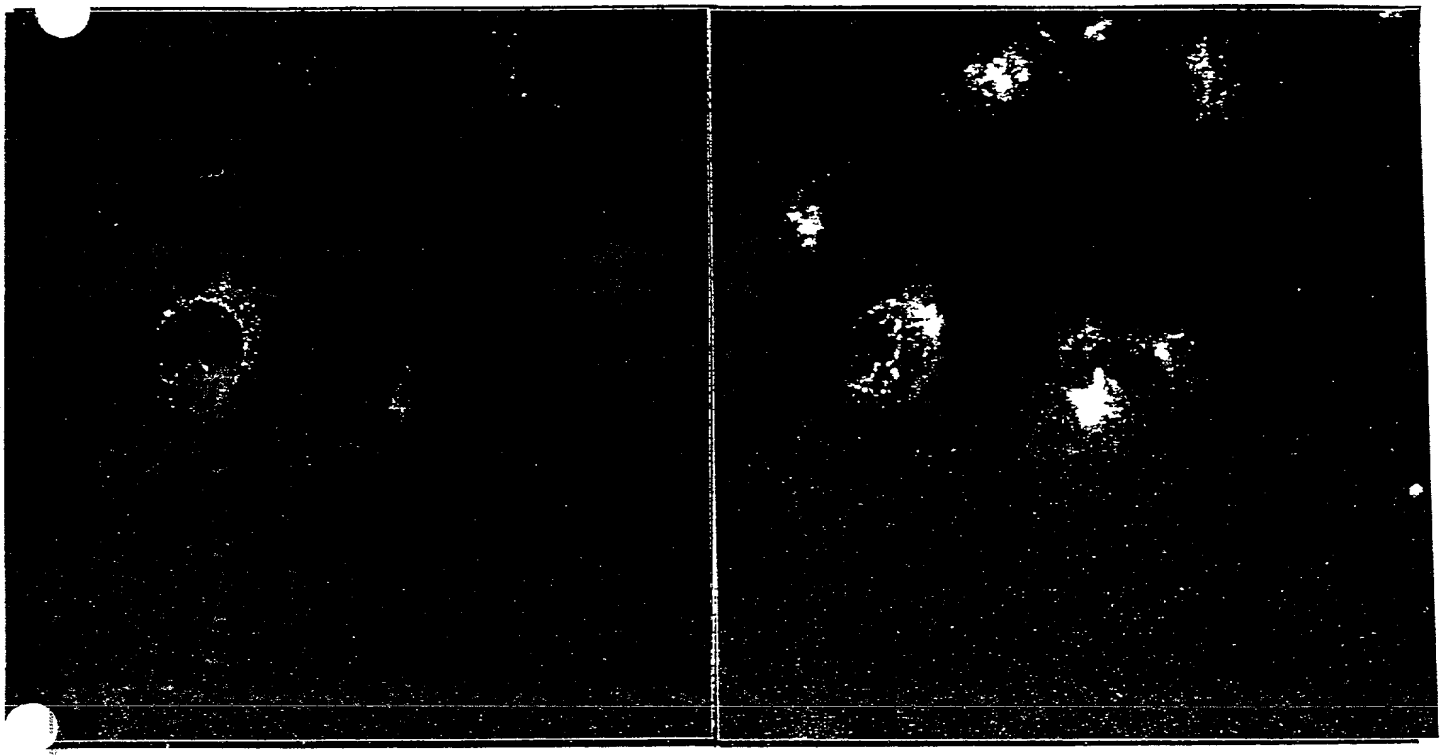
Figure 4. Western blot probed with antiserum to K12. Concentrated media from K562 cells transfected with:

1) empty vector
2) K12 and 7 amino acid flag
3) K12 with C terminus addition
4) Full length K12
5) ZR75-1 cells (not transfected)
6) Molecular weight standards (smallest is 32 kDa

Soluble protein extracts from K562 cells transfected with :

7) empty vector
8) K12 with 7 amino acid flag
9) Full length K12
10) ZR75-1 cells (not transfected)

Figure 5: Subcellular Localization of K12 to the Golgi



A B

Figure 5

Same field of view of ZR75-1 cells that were grown on slides, acetone-fixed and double stained with,

A : antigen -purified anti-K12 polyclonal antibody followed by FITC-conjugated goat anti-rabbit IgG secondary antibody.

B: Rhodamine conjugated Wheat Germ Agglutinin (an immunochemical marker for Golgi bodies)

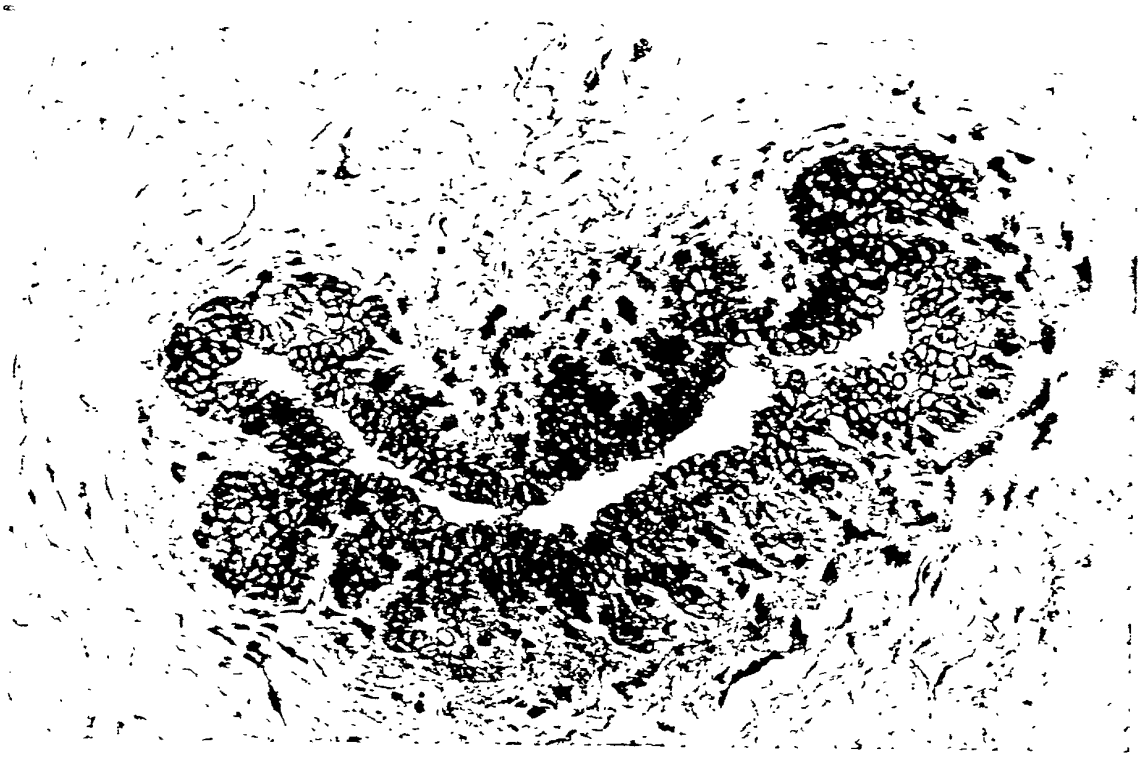


Figure 6 Immunoperoxidase staining of normal breast tissue, A, and colloid breast carcinoma, B, with monoclonal antibody 7C3 against K12. Panel C is a isotype matched P3 control. Dark brown staining reflects monoclonal antibody binding to K12 antigen.

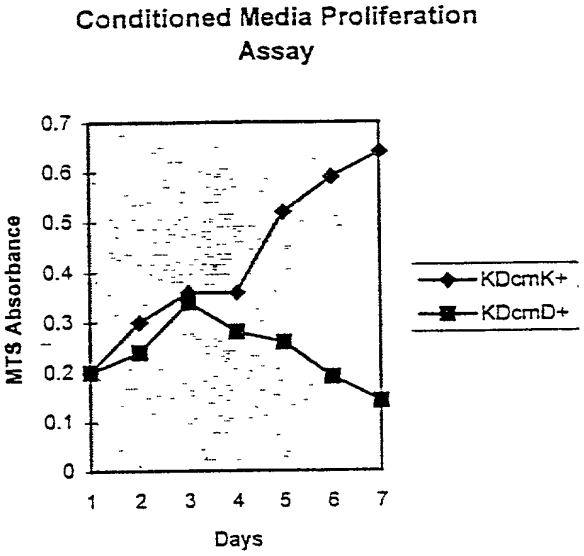


Figure 7: Growth Curves for K562 cells grown in conditioned media from :

KDcmK+, K562 cells secreting K12 into the media, or

KDcmD+, K562 cells transfected with an empty vector and producing no detectable K12 in media.